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ABSTRACT

In order to study transfer trends in Maryland, a method was developed for matching student records at two-year sending institutions and four-year receiving institutions in the state. Transfer matrices, which utilized the computerized fall enrollment records of all public two- and four-year institutions in Maryland, allowed for a campus-to-campus match for all students, as well as for specific groups of students, such as minority, transfer and career program, and full- and part-time enrollees. Both the fall-to-fall movement of students from one campus to another, and the outcomes for cohorts of students four and seven years after entry were examined. Analyses of the data revealed the following: (1) the number of undergraduate students transferring from two- to four-year institutions in Maryland has remained stable over the last six years, with approximately 3,100 full-time and 2,765 part-time students transferring each year; (2) between 1983-84 and 1988-89, the number of full-time black student transfers decreased by 21%; (3) 24% of the students who transferred in 1988-89 were enrolled in career programs at the two-year institution; (4) policies limiting the numbers of students at one four-year institution led to increases in student transfers to other institutions in the state; and (5) between 7% and 8% of entering community college cohorts transferred to four-year schools after earning a community college degree. Data tables, sample matrices, and a detailed discussion of the application and uses of the research methodology are included. (PAA)

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METHODOLOGY AND IMPLICATIONS OF STATEWIDE TRANSFER TRENDS

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ABSTRACT

The study of transfer is complex because it requires the cooperation of both sending and receiving campuses. The ability to match student records between a large number of sending and receiving campuses reveals patterns of transfer which are not apparent when examining transfer between a single community college and a single four year campus. This study reports on a method and procedures for providing this type of data. It also examines transfer trends in Maryland. These data, collected from each public college in Maryland, indicate the number of transfers from several subgroups and from various community college programs has changed. The implications of these transfer trends will be examined. The paper is intended for researchers, policy makers, and academic administrators.

INTRODUCTION

Transfer is one among many choices provided by community colleges. The purpose of this study is to examine the transfer trends of Maryland community college students to the Maryland public four-year colleges and universities, and to examine the data collection and analyses methods which provided the information regarding trends in transfers between campuses.

METHODOLOGY

Student records from all public community colleges and four-year campuses in Maryland were used. Transfer matrices were produced by matching the computerized enrollment records from one fall semester to those of the fall semester in the following year. These data matrices allow a campus to campus match for all students and for groups of students such as minority students and students from transfer and career oriented programs and for full- and part-time students. Producing such data matrices for past years provides trend data on the transfer of community college students to four-year campuses and the reverse transfer of students from four-year campuses to community colleges. Although this methodology is not conceptually complex the procedures require the long-term cooperation of a large number of campuses and a central coordinating data center. These conditions can sometimes be met across community colleges in a particular state but the ability to match across a large number of community colleges and four-year colleges increases our ability to examine transfer trends that may not be obvious when examining the data for a single pair of campuses.

In Maryland, this ability to match student records has been used in several different approaches to the data. One approach has examined the Fall-to-Fall movement of students from one campus to another. The second approach has been to follow entering cohorts of students for four and seven years to see how many of the group graduate and/or transfer from the community college.

Fall-to-Fall Movement of Students between Campuses

Table 1 shows the matrix of campuses that is derived from the matching of student records from one fall semester to those of the subsequent fall semester. In this table the "sending" campuses are aligned along the vertical axis. The receiving campuses are across the top of the table. Using this format you can identify the number of students who remained at the same campus, who show up at another campus, and those who graduate. This matrix is produced each year after fall student files have been received from each campus, cleaned and matched on SSN. Students who do not appear at the home campus or at another campus (four-year or community college), are counted in the "Left System" column.

These fall-to-fall matrices, when examined over time, provide information regarding "Trends" in the number and characteristics of students who transfer. Figure 1 shows that the number of transfer students has increased slowly over the period 1984 to 1989 and that most of this increase has resulted from students who had been full-time while at the community college campus. Annual reports from the Maryland State Board for Community Colleges include tables and graphs which examine which community

RAW DATA MATRIX

Table 1

ENROLLMENT STATUS FOR YEARS 1987 AND 1988

ALL STUDENTS WHO WERE UNDERGRADUATES IN 1987

1987 CAMPUS	1988 CAMPUS																		TRNSF TO
	ALL	ANN	CAT	CEC	CHA	CHE	CCB	DUN	ESS	FRE	GAR	HAG	HAR	HOW	ROC	TAK	GER	PRI	WOR	2YR
ALL	930	0	1	0	1	0	0	0	1	0	1	4	0	0	0	0	0	1	1	10
ANN	1	4296	38	0	0	14	9	4	10	2	0	0	2	14	4	1	0	19	1	119
CAT	1	32	4325	2	0	1	39	24	60	4	0	1	7	47	5	0	1	2	0	226
CEC	0	0	0	482	0	1	0	0	1	0	0	0	7	0	1	0	0	0	0	10
CHA	0	3	0	0	1819	0	1	0	1	1	0	0	0	4	3	0	1	24	0	38
CHE	0	15	3	1	0	672	1	0	1	0	0	0	0	0	0	1	0	1	6	29
CCB	0	6	29	0	0	0	1545	6	27	0	0	1	1	12	0	1	0	0	1	84
DUN	0	6	14	0	0	0	9	1225	61	0	0	0	8	1	0	0	0	0	0	99
ESS	0	11	63	0	1	0	22	63	3811	2	0	0	45	5	2	1	1	1	0	217
FRE	3	1	9	0	0	0	1	0	4	1411	0	3	1	0	8	0	14	2	0	46
GAR	6	0	0	0	0	0	0	0	0	0	177	2	0	0	0	0	0	0	0	8
HAG	1	0	3	0	0	1	0	1	0	4	0	981	0	0	5	0	0	0	0	15
HAR	1	3	12	10	0	0	4	5	63	2	0	0	1679	0	1	1	0	0	0	102
HOW	0	11	52	0	2	0	8	0	7	0	0	0	1	1369	6	1	1	9	0	98
ROC	1	5	8	0	1	1	1	0	0	5	0	1	0	13	4903	223	197	21	1	478
TAK	2	1	1	0	0	0	1	0	2	1	0	0	0	2	257	1363	15	17	0	299
GER	1	2	2	0	0	0	0	0	0	15	0	1	0	0	204	16	761	2	0	243
PRI	0	22	6	0	44	2	0	0	1	3	0	0	1	9	25	27	2	5309	1	143
WOR	0	1	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	316	4
2YR TOT	17	119	241	13	49	22	96	103	239	40	1	13	73	107	521	272	232	99	11	2268
BOW	0	6	2	0	5	1	2	0	2	0	0	0	0	0	1	1	0	46	1	67
COP	0	2	4	3	0	0	35	1	5	0	0	0	1	0	0	0	0	0	0	51
FRO	35	18	9	2	7	2	0	0	4	5	2	8	6	6	25	2	6	10	1	148
STM	0	5	1	0	25	0	0	0	4	0	0	0	0	1	6	2	2	6	0	52
SAL	4	23	15	4	10	19	0	1	9	1	0	1	2	8	10	2	4	19	36	168
TOW	0	23	112	4	4	4	10	10	127	5	0	1	27	15	16	1	2	12	1	374
UB	0	6	9	0	0	0	8	4	13	1	0	3	6	3	0	0	0	0	0	53
MOR	0	0	14	0	0	0	26	3	3	0	0	0	1	1	4	2	0	19	1	74
UMAB	0	1	4	0	0	0	0	0	3	0	0	0	0	1	2	0	3	0	0	14
UMBC	3	63	174	5	10	5	12	10	41	8	0	4	21	52	12	5	7	24	0	456
UMCP	2	64	36	1	29	1	3	2	12	12	2	3	8	21	168	71	17	203	3	658
UMES	0	3	5	0	0	1	1	0	1	0	0	0	0	2	3	1	0	13	5	35
UMUC	0	37	11	0	23	0	2	5	5	1	0	0	6	12	78	26	22	83	1	312
4YR TOT	44	251	396	19	113	33	99	36	229	33	4	20	78	122	325	113	63	435	49	2462

RAW DATA MATRIX

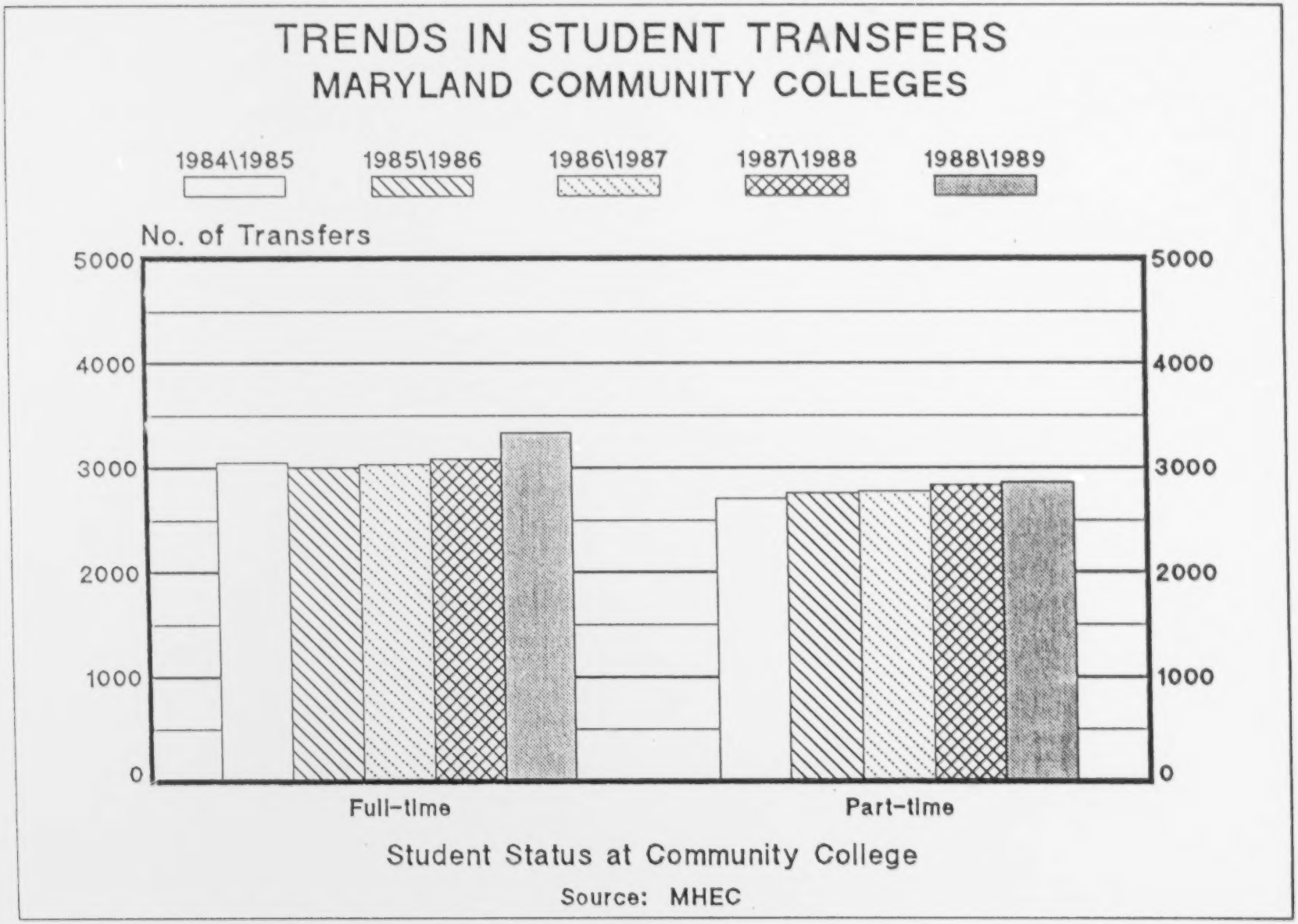
Table 1 (cont.)

ENROLLMENT STATUS FOR YEARS 1987 AND 1988

ALL STUDENTS WHO WERE UNDERGRADUATES IN 1987

1987 CAMPUS	1988 CAMPUS													TRNSF TO 4YR	TOTAL TRNSF	ENRLD GRD/FP	LEFT SYSTEM
	BOW	COP	FRO	STM	SAL	TOW	UB	MOR	UMAB	UMBC	UMCP	UMES	UMUC				
ALL	1	0	113	0	1	0	1	0	0	13	7	1	0	137	147	0	952
ANN	30	0	16	12	38	116	85	3	11	150	137	2	92	692	811	26	5442
CAT	3	15	8	5	9	173	104	12	19	204	32	1	22	607	833	17	5423
CEC	0	0	0	0	4	13	1	0	1	6	2	1	1	29	39	0	883
CHA	8	0	8	30	11	35	3	2	1	22	68	2	54	244	282	12	2620
CHE	0	0	3	1	42	11	3	0	0	6	9	3	1	79	108	7	222
CCB	2	37	1	0	0	33	78	48	6	22	3	1	6	237	321	10	468
DUN	0	8	1	0	3	19	39	8	0	11	3	0	2	94	193	5	1 29
ESS	0	2	6	6	14	241	152	5	13	78	31	3	6	557	774	18	4805
FRE	0	0	16	4	7	37	4	0	2	35	19	0	19	143	189	1	1620
GAR	0	0	29	0	1	4	0	0	0	0	1	0	1	36	44	5	294
HAG	0	0	46	0	7	19	1	0	0	21	13	0	3	110	125	2	1462
HAR	0	2	9	5	5	113	49	2	2	40	27	0	18	272	374	10	2348
HOW	4	0	4	2	4	39	20	4	4	91	62	3	35	272	370	15	1935
FOC	5	0	34	16	17	100	4	5	10	62	552	2	226	1033	1511	21	6312
TAK	3	0	4	0	1	6	2	2	5	25	101	3	73	225	524	13	1942
GER	0	0	10	6	6	19	1	0	3	17	69	0	34	165	408	5	1557
PRI	98	0	15	12	26	70	2	11	8	41	376	13	272	944	1087	17	6347
WOR	0	0	0	0	34	0	0	0	0	0	1	7	0	42	46	1	419
2YR TOT	154	64	323	99	230	1048	549	102	85	844	1513	42	865	5918	8186	185	49880
BOW	1146	2	1	0	0	2	0	5	0	4	16	0	8	38	105	23	848
COP	2	1112	0	0	1	0	2	13	3	11	2	1	0	35	86	23	895
FRO	0	2	2312	2	11	28	3	5	11	13	29	1	10	115	263	36	1002
STM	1	0	2	889	5	16	0	1	0	5	14	0	5	49	101	9	403
SAL	1	1	0	3	2722	32	2	0	0	15	24	18	5	101	269	59	1378
TOW	1	9	7	4	15	8684	41	9	13	47	59	0	16	221	595	145	4856
UB	0	3	12	0	0	8	1477	4	0	5	1	0	5	38	91	87	994
MOR	2	17	0	0	1	5	6	1958	0	6	2	5	2	46	120	40	1299
UMAB	1	1	0	0	0	3	0	0	486	3	5	0	3	16	30	12	357
UMBC	4	8	4	3	14	71	25	6	73	5018	156	5	35	404	860	136	2508
UMCP	14	3	10	7	25	52	13	8	66	68	18702	9	624	899	1557	360	8576
UMES	2	2	0	0	20	1	0	1	2	10	22	727	6	66	101	8	381
UMUC	9	1	3	3	1	5	3	0	5	26	355	3	4623	414	726	121	5676
4YR TOT	37	49	39	22	93	223	95	52	171	213	685	42	719	2442	4904	1059	29173

Figure 1


TRENDS IN STUDENT TRANSFERS
MARYLAND COMMUNITY COLLEGES
1984\1985
1985\1986
1986\1987
1987\1988
1988\1989
No. of Transfers
5000
4000
3000
2000
1000
0
Full-time
Part-time
Student Status at Community College
Source: MHEC

colleges have been increasing the number of students who transfer and which have been decreasing. Several changes in these trends are noteworthy. There were decreases in the number of part-time students who transferred to the University of Maryland College Park (the largest recipient campus). And for several years there were also decreases in the number of full-time students who transferred to the College Park campus. There was a reversal of the decrease for full-time students in the Fall 88 to Fall 89 match (see Figures 2 and 3). During the years the University of Maryland College Park was taking fewer transfer students other campuses began increasing the number of community college students they accepted as transfers. The graphs and the matrix methodology, illustrate that although there was an overall increase of 7 percent in the number of transfers during the period 1983 to 1989 the flow of students from certain campuses decreased and the flow to particular campuses changed.

The careful examination of the fall-to-fall matrices and the trends that can be derived from these data have also revealed variations for subgroups. In the Fall 1983 to Fall 1984 matrix 709 black students had transferred compared to 694 transfers in the 88/89 matrix. The number of these students who had been full-time while at the community colleges and then transferred declined from 353 in 83/84 to 278 in 88/89 (-21 percent). Black students who had been part time at the community colleges had, on the other hand, increased from 356 in 83/84 to 416 (+17 percent) in 88/89. The decline in the number of full-time black students who transferred has implications for transfer preparation strategies and for

Figure 2

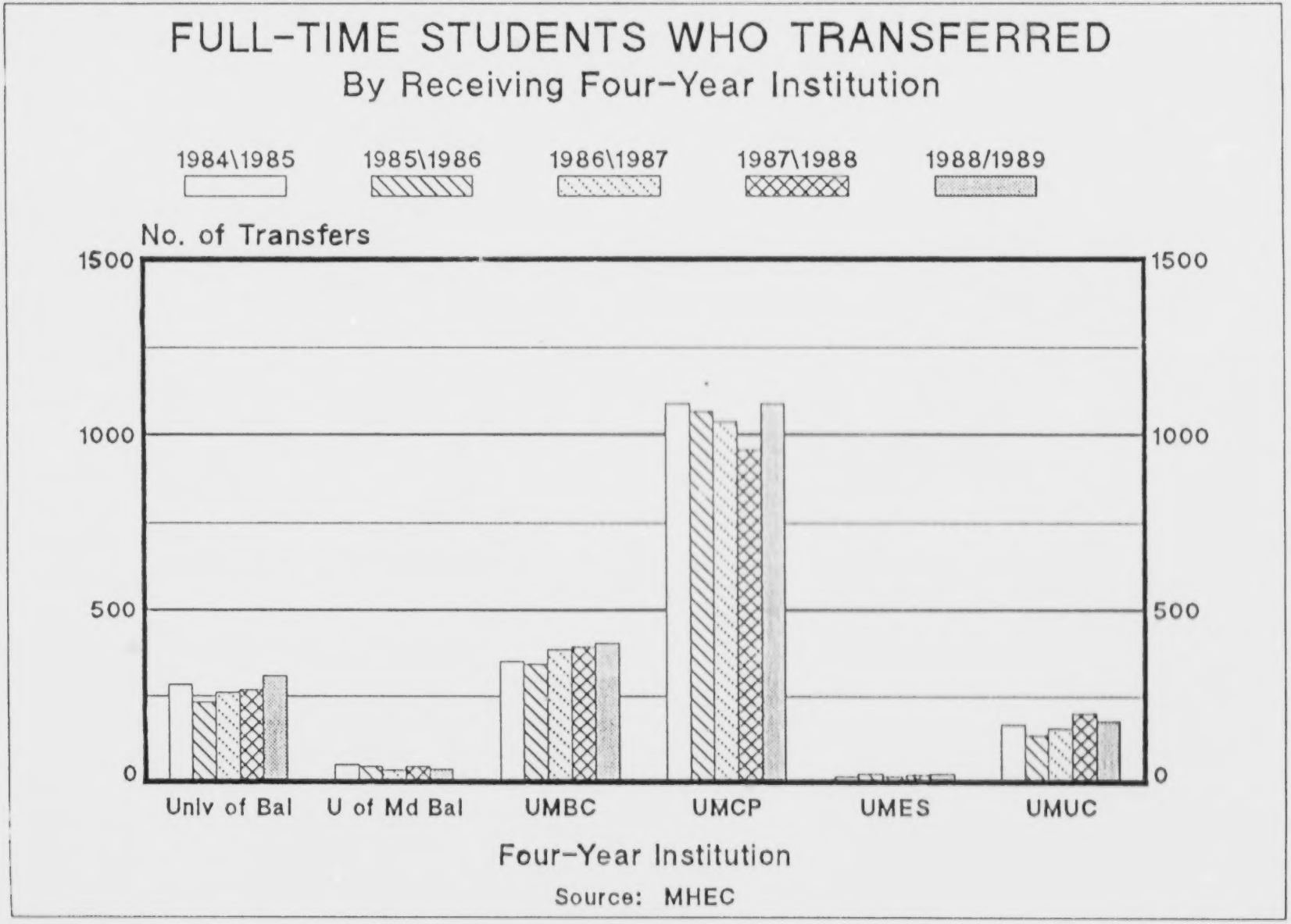
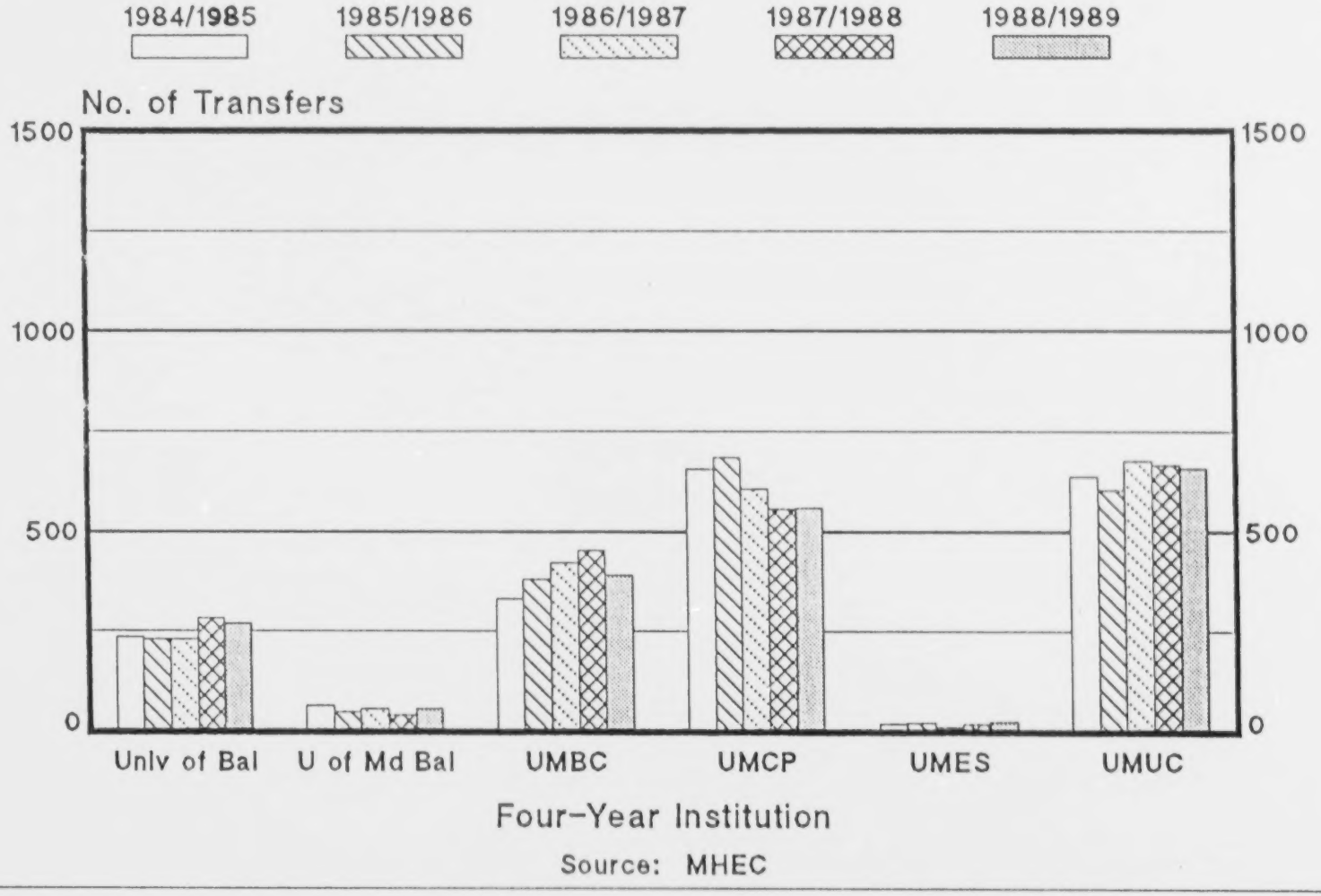

FULL-TIME STUDENTS WHO TRANSFERRED
By Receiving Four-Year Institution
1984\1985
1985\1986
1986\1987
1987\1988
1988/1989
No. of Transfers
1500
1000
500
0
Univ of Bal
U of Md Bal
UMBC
UMCP
UMES
UMUC
Four-Year Institution
Source: MHEC

Figure 3

PART-TIME STUDENTS WHO TRANSFERRED

By Receiving Four-Year Institution



Source: MHEC

policies seeking to increase the flow of black students towards bachelor's degree. For instance, counseling support and financial aid need to be made available to part-time black students seeking to transfer. Four-year colleges seeking to recruit black students should look beyond full-time community college students.

The pool of students who are seen as potential transfers must also be widened to include students in career programs. In the 88/89 transfer matrix 24 percent (1,495) of the students who transferred were in career programs the previous fall while at the community colleges (Figure 4). While this finding has been previously noted by many authors, the transfer matching system developed in Maryland provides the opportunity to examine which community colleges these career students are coming from and which four-year campuses are accepting these students.

Longitudinal Cohort

A second approach to examining transfer, using our ability to match student records across community college and four-year campuses, has been to follow a cohort of entering students for an extended time period and compare transfer patterns across different cohorts (Table 2). For instance, the records of the 1984 entering cohort of new students to community colleges can be matched to all subsequent fall files from all colleges. This allows an analysis of how many transfer, graduate or are still enrolled within a four-year period. The results of comparing these indicators across cohorts are very useful. Maryland has developed an index called the "Success Rate" which combines graduation, transfer and still

Figure 4

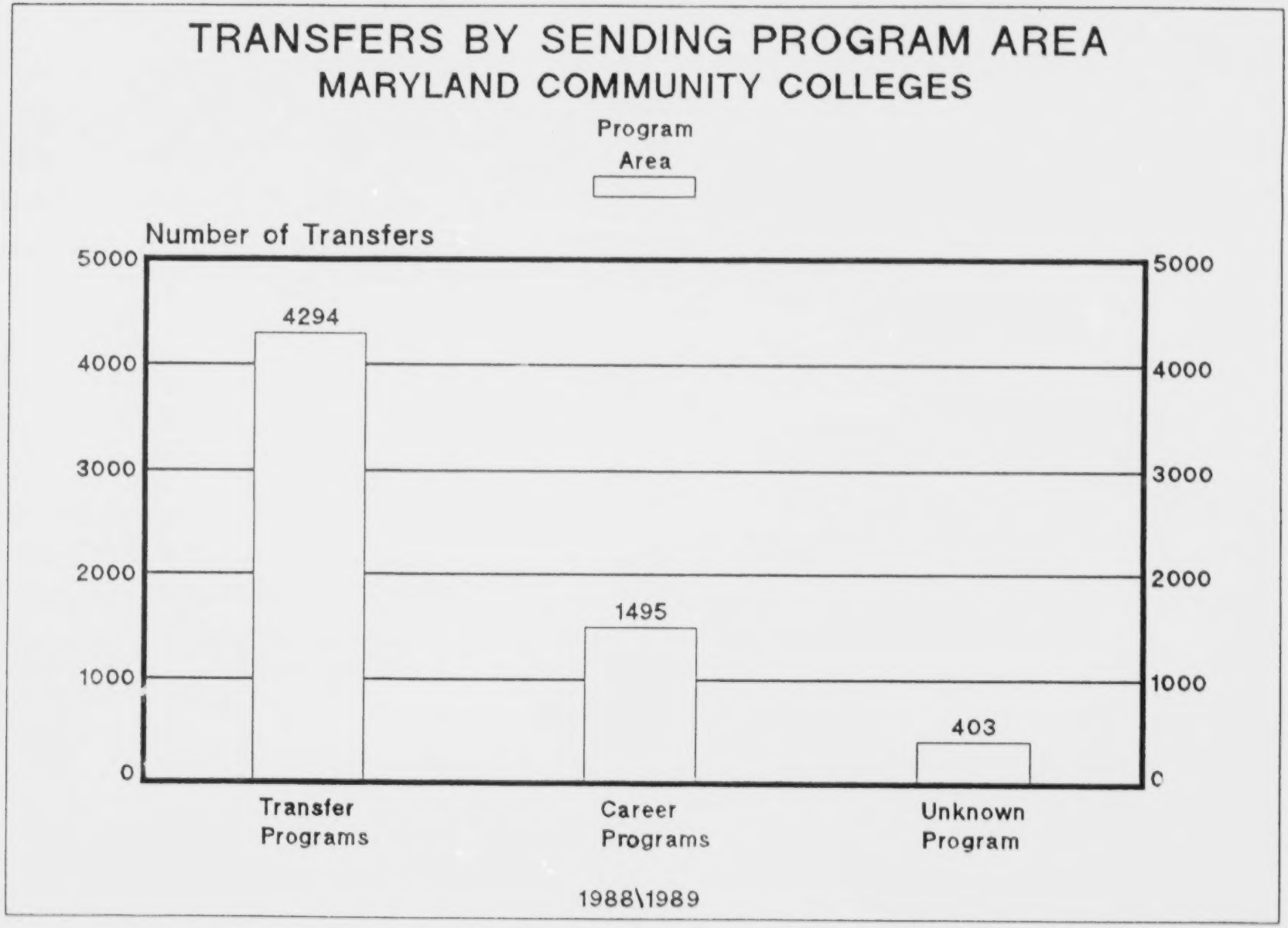

TRANSFERS BY SENDING PROGRAM AREA
MARYLAND COMMUNITY COLLEGES
Program Area
Number of Transfers
5000
4000
3000
2000
1000
0
4294
1495
403
Transfer Programs
Career Programs
Unknown Program
1988\1989

Table 2

TRANSFER STATUS OF FIRST-TIME FULL-TIME STUDENTS
MARYLAND COMMUNITY COLLEGES
FALL 1982-1985

	Number in Initial Cohort				Percent Transferring Within 4 Years			
College	Fall 1982	Fall 1983	Fall 1984	Fall 1985	Fall 1982	Fall 1983	Fall 1984	Fall 1985
Allegany	388	426	424	407	14%	14%	16%	17%
Anne Arundel	853	797	835	869	30%	25%	29%	33%
Baltimore	1,153	1,154	993	614	10%	7%	10%	12%
Catonsville	833	863	817	768	26%	29%	27%	29%
Cecil	118	117	125	88	8%	11%	16%	11%
Charles	346	274	201	211	20%	18%	36%	33%
Chesapeake	245	170	151	184	17%	11%	21%	17%
Dundalk	157	222	143	153	15%	14%	19%	14%
Essex	1,026	996	922	802	23%	23%	27%	23%
Frederick	308	298	388	337	16%	23%	20%	24%
Garrett	116	107	93	70	17%	14%	22%	21%
Hagerstown	368	386	346	359	11%	15%	15%	17%
Harford	481	402	377	402	23%	20%	26%	31%
Howard	260	213	205	206	30%	28%	24%	29%
Montgomery	2,350	2,271	2,116	2,110	26%	26%	29%	29%
Prince George's	1,656	1,452	1,382	1,281	25%	21%	21%	28%
Wor-Wic Tech	125	117	115	81	8%	10%	19%	15%
Systemwide	10,783	10,265	9,633	8,942	22%	21%	23%	25%

Source: Enrollment Information System (EIS)

Prepared by MD State Board for Community Colleges 02-91

enrolled students (Table 3). Again, while the overall results are of considerable interest, the comparison of subgroups and the results between colleges provide indicators unique to the ability to match across a large number of sending and receiving campuses.

For the entire Maryland community college system the percent of students transferring from each cohort has increased from 22 percent for the 1982 cohort to 25 percent for the 1985 cohort. Each of the cohorts in these analyses have been tracked within the Maryland higher education system for four years. From the 1982 cohort to the 1985 cohort the percent transferring without a community college degree had increased from 15 to 17 percent (Figure 5). The percent transferring with a community college degree has remained at 7 to 8 percent of the entering cohort. The percent graduating from the community colleges within four years has remained in the 18 to 20 percent range for the state system.

SUMMARY

The number of undergraduate students transferring from community colleges in Maryland has remained stable over the past six years. The transfer matrices indicate that each year approximately 3,100 full-time and 2,765 part-time community college students transfer to public four-year institutions in Maryland. The result of policies limiting the number of undergraduates at the University of Maryland at College Park and the subsequent increase of community college transfers at other campuses are apparent in the trend patterns developed by the matching of enrollment and degree files across the community colleges and four-year campuses.

Table 3

STATEWIDE 'SUCCESS RATE' OF COMMUNITY COLLEGE FIRST-TIME FULL-TIME STUDENTS FOUR YEARS LATER

Indicator	Fall 1982	Fall 1983	Fall 1984	Fall 1985
Percent Transferring	22%	21%	23%	25%
- With No Degree	15%	15%	16%	17%
- With Degree	7%	7%	8%	8%
Percent Graduating	20%	18%	19%	19%
Percent Still Enrolled	8%	8%	8%	9%
SUCCESS RATE	*43%*	*41%*	*43%*	*45%*

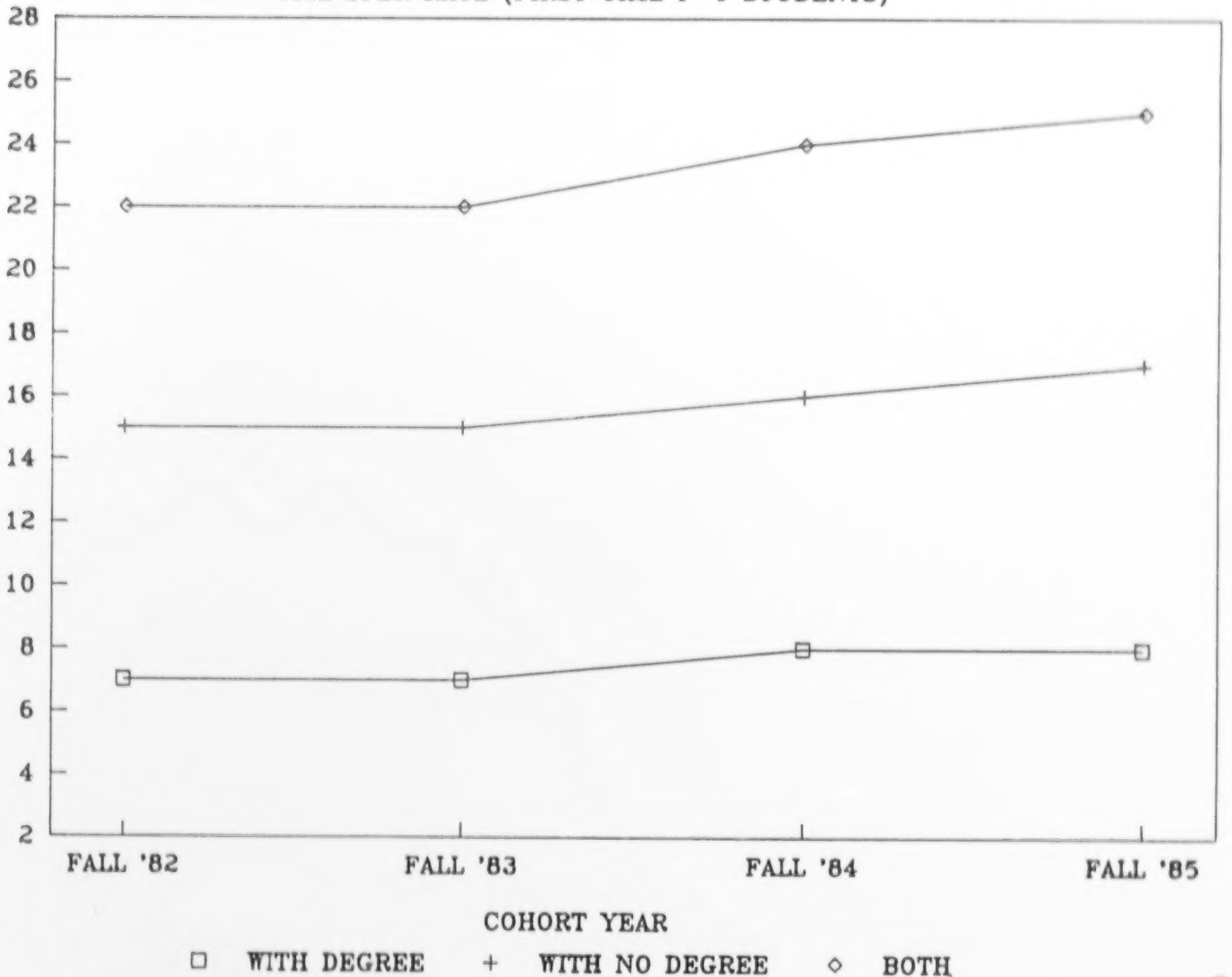
Source: Enrollment Information System (EIS)

Prepared by MD State Board for Community Colleges 02-91

Figure 5

MARYLAND COMMUNITY COLLEGES

TRANSFER RATE (FIRST TIME F-T STUDENTS)



Trends for various community college campuses and for subgroups attending the community colleges can also be identified. Fall-to-Fall matches indicate increases in the number of part-time students transferring and decreases in the number of full-time black students who transferred. These fall-to-fall changes and changes in the numbers of entering students who transfer within a four-year period have important implications for state policies. The ability of each campus to examine its own results and the results for subgroups on its campus provides information for campus policies and procedures.

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